

Design and testing of a multipurpose transboundary groundwater monitoring network in the Extended Drin River Basin

Task 3: Field Testing

Final Report

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Executive Progress Summary

Efforts of land and water administrators to enhance sustainable development in this transboundary region, reconciling socio-economic growth with protection of environmental values, harmonizing national policies, introducing EU Framework Directive principles and complying with the provisions of the ICZM Protocol to the Barcelona Convention, have been so far hindered, amongst others, by the lack of continuous and systematic groundwater monitoring.

The proposed Pilot Project aimed at addressing this situation by designing and pilot testing modern multi-purpose groundwater monitoring networks and protocols that will provide long term trends as well as rapid answers to short term priority issues of concern.

Following the development of the conceptual and vulnerability models along with program of monitoring groundwater by UNESCO experts in 2019, a mission was undertaken to present results to both the Albanian and Montenegrin Ministries and Authorities and to discuss the next steps, in December 2019.

The next steps included the identification of the location of the monitoring wells and the way forward in their installation and monitoring of the resource.

In our discussions with the Ministry of Agriculture and Rural Development, the Government identified the Geological Survey of Montenegro as the appropriate entity to undertake this activity and the location of a new monitoring well was identified to be in the sub-lacustrine spring Bolje Sestre.

Similar discussions were held with the Water Resources Management Agency in Albania as well as the Albanian Geological Survey. In this case, the governmental authorities expressed their preference to open a call for the procurement and installation of the telemetric monitoring station, reassuring of their taking over the monitoring part. The location of the monitoring well was chosen to be at Gouss Kruger system (E=4370823, N=4650536, Z=4.0 m)

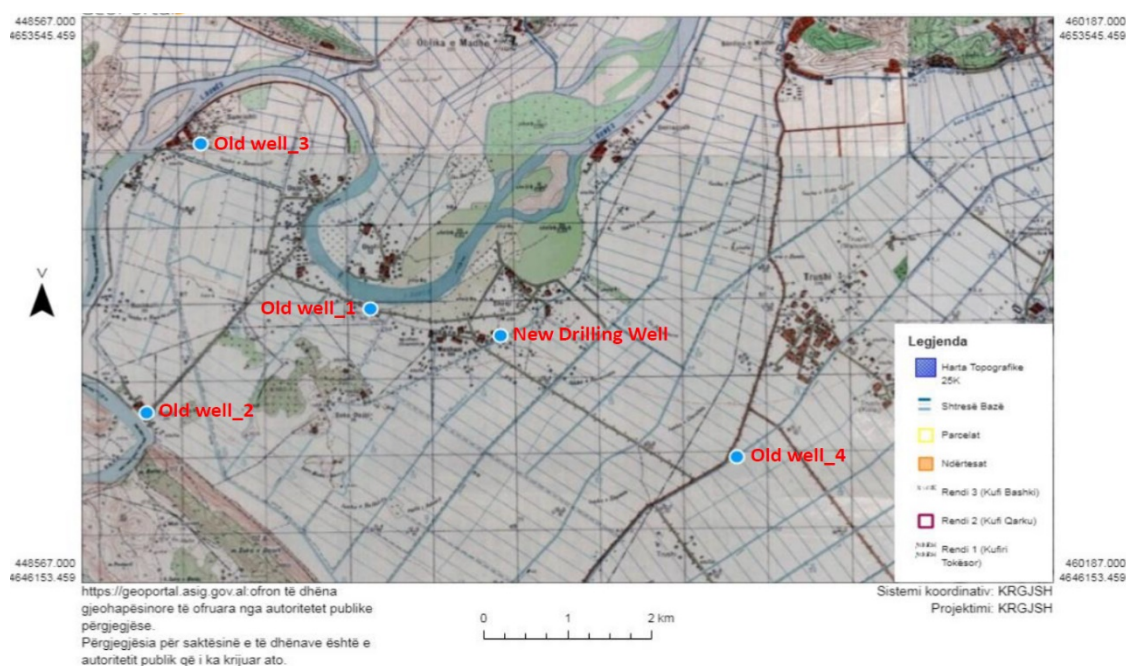


Figure 1 Chosen location of the monitoring well in Albania

Following an open international call for proposals, efforts to locate a company to drill a new monitoring well and install the telemetric equipment, compatible with the specifications of the monitoring programme were not successful. The time period of the call was extended but the result remained the same. In fact, there are no companies in Albania who are active in this area (end to end service).

Contacts were then made with private companies to proceed with the monitoring of groundwater, at the agreed by the designed programme location.

Eventually, the UNESCO groundwater section in Paris in collaboration with UNESCO's Regional Bureau for Science and Culture in Europe and its Sarajevo Antenna Office managed to find a private company (KRIJON) who agreed to drill and equip the monitoring network with the willingness of the Geological Survey of Albania (GSA) to take the ownership of the monitoring well once it is installed.

UNESCO has been working closely with the Geological Survey of Montenegro and the respective institutions in Albania for testing three monitoring stations (two in Albania and one in Montenegro) -in cooperation with the national institutions- that were used for testing targeted parameters of groundwater monitoring and for training purposes for the period [10/2020-12/2020].



Figure 2 Performed drilling, testing and monitoring equipment installation in Montenegro (April 2019)

In the case of Montenegro, the monitoring started in April 2020 and continues to date. Also, in the below link is, the report of Montenegro monitoring station with tasks from 3.1 to 3.4.

<https://drive.google.com/file/d/1Sy3QqmcYVgPMGBgQkx63OomW3PYtIOZU/view?usp=sharing>

Manuals related to the equipment were translated in Montenegrin and training of 11 staff members (of which 7 were women) were conducted but with limited physical presence due to restrictions related to the COVID-19 situation. There are plans to continue with sessions online on the use of the equipment and monitoring.

In the case of Albania, due to the aforementioned unforeseen challenges, the equipping of the stations started only in October (Quarter 4) in the Gouss Kruger area, a location chosen in close coordination with the Geological Survey of Albania and national institutes and experts.

An operation manual in Albanian and training sessions are expected to take place in the last week of November. Reports for tasks 3.1 to 3.4 are expected to be developed and delivered by the end of November.

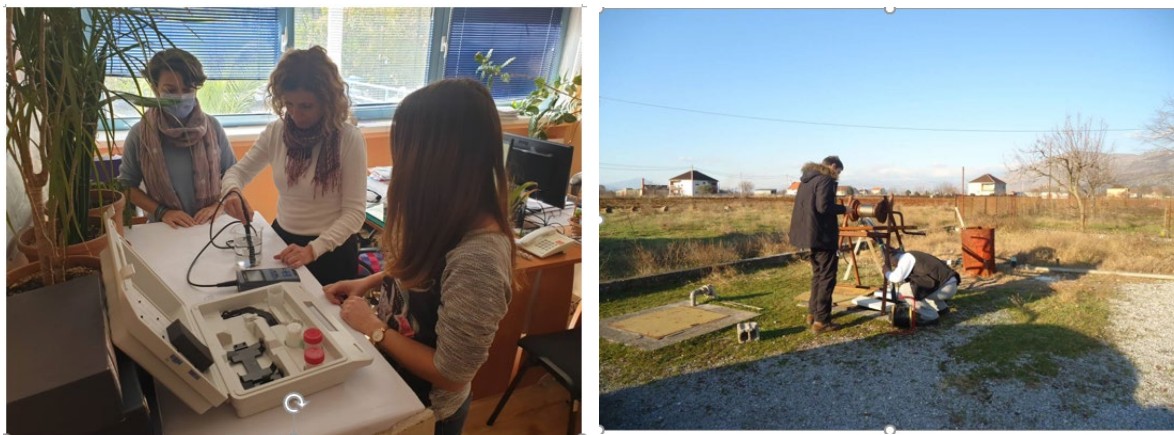


Figure 3 Performed training on the monitoring network in Montenegro

In annex (I) herein, you will find, the list of all planned and achieved deliverables in this project phase as well as direct links to the corresponding reports, manuals, photos and attendees lists of the trainings.

TASK I: Deliverables Status

Task	Deliverables	Status Albania	Status Montenegro
Task 3: Field Testing	3.1.) <i>Report containing the Final Design of Monitoring Stations, including instrumentation specifications</i>	<u>A final report was sent on 15.10.2020</u>	<u>Expected to be received by the end of November 2020</u>
	3.2.) <i>Two monitoring stations (equipped with the full array of sensors and transmission systems) fully operational</i>		
	3.3.) <i>Report of compliance of the equipment output (from two stations) with the Design requirements and operation protocols.</i>		
	3.4.) <i>Report on the state of the groundwater based on results of the analyses carried out during the testing of the defined proposal of the program of monitoring of groundwater.</i>		
	Montenegro Report Link (tasks 3.1 to 3.4): https://drive.google.com/file/d/1Sy3QqmcYVgPMGBgQkx63OomW3PYtIOZU/view?usp=sharing		
	3.5.) <i>Training sessions of staff of responsible institutions from Albania and Montenegro on use of equipment and detailed design proposals (e.g. exchange protocols) based (among others) on the real-time data obtained from two newly established monitoring stations.</i> 3.6.) <i>Simplified operational manuals in Albanian and Montenegrin languages</i>	<u>Completed & Full list sent on November 18, 2020</u>	<u>A List of the trainees and operational manual will be sent by end of November 2020</u>
Montenegro training information Link (task 3.5): https://drive.google.com/drive/folders/1idwWPL7WjZp33mOviPtigUE2TJ9Wla31?usp=sharing			
Operational Manual in Montenegrin (task 3.6) https://drive.google.com/file/d/151fb1unFjQBDj7WTVqMBX4qagLKdpopk/view?usp=sharing			